

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Title:	Work Zone Intrusion Alarm Effectiveness	
RFP NUMBER: 7212680	NJDOT RESEARCH PROJECT MANAGER: Ed Kondrath	
TASK ORDER NUMBER: 16	PRINCIPAL INVESTIGATOR: Cathy Krupa	
Project Starting Date: 3/10/2010 Project Ending Date: 9/9/2010	Period Starting Date: 4/1/2010 Period Ending Date: 6/30/2010	

Task	% of Total Project Budget	Total Budget	% of Task This Quarter	Cost This Quarter	% of Task to Date	Total Cost to Date
1. Study Design	21.5%	\$7,749	52.8%	\$4,087	91.5%	\$7,094
2. Information Collection	41.3%	\$14,909	80.6%	\$12,023	80.6%	\$12,023
3. Synthesis and Final Report	37.2%	\$13,418	0%	\$0	0%	\$0
TOTAL	100%	\$36,076				\$19,117

Project Objectives:

The objectives of this project are to:

1. Evaluate the acceptance of the SonoBlaster® Work Zone Intrusion Alarm by NJDOT maintenance workers and its effectiveness in protecting the workers from injury caused by errant vehicles that breach the work zone.
2. Prepare a final report summarizing the research conducted.

Project Abstract:

Workers in highway work zones routinely face dangerous situations that cause serious injuries and fatalities. In order to reduce the incidence of and potential for fatalities/injuries at highway construction and maintenance sites, jurisdictions have deployed safety devices and systems to safeguard employees. One of the potential safety approaches is the use of intrusion alarms, which are designed to protect workers from injury caused by errant vehicles that breach the work zone. The NJDOT will deploy the SonoBlaster® Work Zone Intrusion Alarm on routine highway maintenance projects on a trial basis. To determine the acceptance and effectiveness of this device, a study design featuring field observations and in-person group and individual interviews focused on multiple maintenance crews will be employed. The final report will summarize the research conducted for this task order and present conclusions about future SonoBlaster® deployments in New Jersey.

1. Progress This Quarter by Task:

Task 1:

- Communicated with SonoBlaster® vendor, FHWA Resource Center (Colorado), and FHWA Work Zone Mobility and Safety Team, resulting in the delivery of improved SonoBlaster® units; FHWA's interim report on the results of the SonoBlaster® demonstration project (field tests by State DOTs and local agencies conducted in 2008 and 2009); and awareness of "lessons learned" and "best practices";
- Finalized field and interview guides;
- Scheduled field observations;
- Completed monthly progress reporting; and
- Participated in quarterly review meeting.

Task 2:

- Conducted field observations;
- Conducted group interviews;
- Conducted individual interviews; and
- Prepared notes from the observations and interviews.

Task 3:

- No activity.

2. Proposed Activities for Next Quarter by Task:

Task 1:

- Schedule field observations as necessary;
- Complete progress reports; and
- Participate in final project review meeting.

Task 2:

- As necessary, conduct field observations;
- As necessary, conduct group interviews; and
- As necessary, conduct individual interviews.

Task 3:

- Complete draft final report;
- Present draft final report at a briefing for NJDOT; and
- Complete final report incorporating NJDOT feedback.

3. List of Deliverables Provided in This Quarter by Task (product date):

- Task 1. Contacts with SonoBlaster® stakeholders (April 2010);
- Task 1. Schedules for conducting field observations (note that one schedule setting up the entirety of the field observations/interviews is not feasible; rather, schedules are dynamic and multiple);
- Task 1. Final field and interview guides (April 2010);
- Task 1. Participation in project review meetings (April and June 2010) and completion of progress reports (monthly);
- Task 2. Field observations (May and June 2010);
- Task 2. Group interviews (June 2010); and

- Task 2. Individual interviews (June 2010).

4. Progress on Implementation and Training Activities:

- No work on implementation or training in this period.

5. Problems/Proposed Solutions:

- SonoBlaster® units received by New Jersey DOT in 2009 have been superseded by new units that were improved as a result of feedback provided by State DOTs and local agencies that participated in FHWA's 2008-2009 demonstration project. NJDOT received the new SonoBlaster® units on April 28, 2010. Quality control issues surfaced during the first test deployment. Eight of 22 units prepared for the deployment apparently were defective, due to misfiring (while in the locked position), inability to cock the firing mechanism, or improperly operating cocking indicator. Employee Safety staff examined the "defective" units and judged that one or more of the issues might be avoided by particular handling techniques while readying the units for deployment; therefore, the number of defective units may be less than initially indicated. Staff will "road test" the newly prepared units. As necessary, a request will be submitted to FHWA for replacement units from the vendor.

Total Project Budget	\$36,076.12
Contract Amount:	\$36,076.12
Total Project Expenditure to date	\$19,117
% of Total Project Budget Expended	53%